

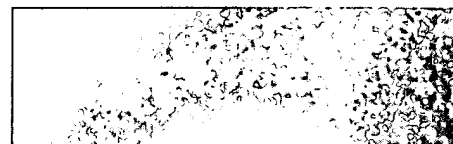


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# Health



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## Chronic Renal Failure (CRF)

By Dr Rob Hicks

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The kidneys act as the body's filtering system. They remove the waste materials that collect in the blood as by-products of normal everyday bodily function. Sometimes, however, things go wrong and the kidneys fail.

### What do the kidneys do?

Each kidney is the size of a fist. Every day the two kidneys process approximately 190 litres of blood by passing it around 225 kilometres of 'tubes' and millions of 'mini-filters'. Although there are two kidneys, you can remain healthy with just one, even when this one is only working at 10-20% of its full capacity.

The kidneys also help to maintain the acid base balance, the balance of chemicals such as sodium and potassium, and they help to produce some hormones and vitamin D too.

### Why do the kidneys fail?

There are a number of reasons why the kidneys may fail over time, called chronic renal failure (CRF). The most common ones are as a result of:

- Diabetes - 30% of patients with diabetes will develop kidney failure.
- Inflammation - e.g. glomerulonephritis.
- High blood pressure. ✓
- Long-term infection.
- Blockage - due to kidney stones, for example.
- Polycystic kidney disease.
- Certain medicines.

The chance of someone developing CRF increases after the age of 60 years old. Currently in the UK approximately 32,000 kidney patients are receiving treatment for CRF and each year the number increases.

### How does CRF affect someone?

Because the kidneys can manage with only a small proportion of their functional ability it may be some time before any effects are noticed. When this occurs the symptoms may be quite vague.

Someone may simply feel tired and lethargic. They may have noticed that they have to go to the toilet to pass water more often, especially at night. Other symptoms include itchy skin, nausea, impotence for men, and fluid retention that makes their ankles swell up or that makes them feel short of breath.

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The doctor will look for signs of kidney failure and run a number of tests to help make the diagnosis that include urine tests, blood tests, and usually a scan of the kidneys.

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### Specialist care

Good treatment at a specialist kidney unit can help to slow down the progression of CRF. In some cases it can delay or even avoid the need for dialysis or kidney transplantation.

Under the care of the kidney specialist if it's possible to treat the cause of kidney failure then this will be done. Also, if another condition, for example high blood pressure or diabetes, is present then keeping these under good control can help to prevent the kidney failure becoming worse.

Some dietary changes are needed to help the kidneys and a dietician will provide advice about this. Protein, sodium, potassium, and fluid intake, for example, will need to be modified to ease the burden on the kidneys and to ensure the body doesn't become overloaded. Fortunately nowadays there is less dietary restriction than there was in the past.

One of the consequences of CRF is that it can cause anaemia and bone disease to develop. Fortunately, both of these can be successfully treated with medication.

### Treating CRF

Transplantation is the best treatment for patients with CRF. However, there are more people needing kidneys than there are donor kidneys available. Until a transplant becomes possible the role of the kidneys in filtering out the waste products from the blood can be performed through a process called dialysis.

There are two types of dialysis available:

- **Haemodialysis** - blood passes from the blood vessels through a machine where waste products are removed from the blood before it is returned to the body. This is performed three times a week in hospital and each session takes about 3-5 hours.
- **Peritoneal Dialysis (PD)** - Continuous Ambulatory Peritoneal Dialysis (CAPD) is where fluid in the peritoneal cavity (in the abdomen where the bowel is) is exchanged for fresh fluid. This process uses gravity to drain out old fluid and replace it with new fluid from a bag. It takes around 30 minutes and is performed at home around 3-4 times a day.

### Automated Peritoneal Dialysis (APD)

This uses a machine to introduce and remove fluid from the peritoneal cavity. It's performed overnight and so is more convenient than CAPD.

The type of dialysis used depends upon many factors including:

- Physical - e.g. the degree of kidney function
- Emotional - e.g. patient preference
- Social - e.g. having a suitable home environment

It's very important that people with CRF eliminate risk factors for cardiovascular disease, e.g. stop smoking, and that they are immunised against pneumococcal and influenza infections.

### General advice

With patients having to spend so much time looking after their CRF it's important that they, and their carers, are encouraged to live as normal a lifestyle as is possible.

It's quite common for those with CRF to suffer with depression as a consequence of their condition and emotional support is always available.

Additional financial assistance is available for those with CRF from social services and if necessary help with re-housing can be provided.

### Useful Links

**National Kidney Research Fund**

Helpline 0845 300 1499

[www.nkrf.org.uk](http://www.nkrf.org.uk).

**Carer's National Association**

Helpline 0808 808 7777 (Carers line 10-12, 2-4 Mon-Fri)

<http://213.130.44.59/carersuk/>.

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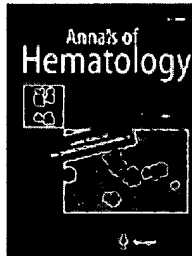
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## Article



### Annals of Hematology

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### Long-term therapy with recombinant human erythropoietin (rHu-EPO) in progressing multiple myeloma

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#### Abstract:

Recombinant human erythropoietin (rHu-EPO) is an effective growth factor for erythroid progenitor cells in anemia provoked by several conditions, including bone marrow tumors such as multiple myeloma (MM). We studied a group of 54 patients with MM undergoing second-induction chemotherapy. Thirty of them were randomly assigned to receive rHu-EPO at an initial dosage of 150 units/kg body weight three times a week, increased to 300 units/kg from the sixth week to the end of the 24-week study. Hemoglobin (Hb) levels increased in 77.7% of these patients by the eighth week. In addition, five transfusion-dependent patients in treatment with the VMCP protocol completed the trial without requiring blood supplement after the third month, whereas seven control patients required frequent supplements. Monthly assessment of hematologic parameters demonstrated the ability of rHu-EPO to increase reticulocyte counts, whereas five patients became resistant to the second-induction chemotherapy in apparent concurrence with their rHu-EPO therapy. The response to rHu-EPO in four of the five MM patients receiving cytotoxic protocols combined with  $\alpha$ -interferon ( $\alpha$ -IFN) included an increase of serum IgM after the third month. This effect was not demonstrable in any other group, including three rHu-EPO-untreated patients undergoing  $\alpha$ -IFN + VMCP combined therapy, as well as rHu-EPO-treated patients not receiving  $\alpha$ -IFN. Our data suggest that  $\alpha$ -IFN plus rHu-EPO treatment in MM patients is effective in restoring normal B cell function. These results may reflect in vivo the modulation of normal human B cells and lymphoblasts by rHu-EPO observed in vitro.

#### Keywords:

Key words Anemia,  $\alpha$ -Interferon, Chemotherapy, Multiple myeloma, rHu-EPO*The references of this article are secured to subscribers.*For assistance inside the Americas: [springerlink@springer-ny.com](mailto:springerlink@springer-ny.com), For assistance outside the Americas: [springerlink@springer.de](mailto:springerlink@springer.de)Springer-Verlag Heidelberg | Tiergartenstr. 17 | D-69121 Heidelberg | Germany | [Privacy](#), [Disclaimer](#), [Terms and Conditions](#), © Copyright Information

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